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Jan. 25, 1978

Transcript of testimony
of
Harry Ike + John Keene

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No Brief

SUPERIOR COURT OF NEW JERSEY
LAW DIVISION - MORRIS COUNTY
DOCKET NO.

FILED

January 25, 1978

REC'D.
APPELLATE DIVISION

JAN 14 1980

JAN 9 1979

JOSEPH CAPUTO and
ALDO CAPUTO,

Stephen W. Townsend
Plaintiffs, CLERK

RM
Elizabeth McLaughlin
Clerk

TRANSCRIPT OF TESTIMONY

-vs-

OF
HARRY IKE and JOHN KEENE

TOWNSHIP OF CHESTER,
PLANNING BOARD OF CHESTER,
et als.

Defendants.

FILED
APPELLATE DIVISION

JAN 9 1979

Elizabeth McLaughlin
RM
Clerk

BEFORE:

HONORABLE ROBERT MUIR, J.S.C.

APPEARANCES:

For the Plaintiffs: PHILIP LINDEMAN, ESQ.

For the Defendants: ALFRED L. FERGUSON, ESQ.

Frank E. Nolan
Official Court Reporter.

RC

PENGAD CO., BAYONNE, N.J. 07002 - FORM 2046

I N D E X

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<u>WITNESS</u>	<u>DIRECT</u>	<u>CROSS</u>	<u>REDIRECT</u>	<u>RECROSS</u>
HARRY IKE	2	30	34	36
JOHN KEENE	42	77	86	

E X H I B I T S

<u>NO.</u>	<u>DESCRIPTION</u>	<u>FOR IDENT.</u>	<u>IN EVI.</u>
D-77	Copy of 303 Draft Plan.	11	
D-78	Above Exhibit Remarkd	12	
D-79	Curriculum Vitae Dated November 1975.		45

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THE COURT: Let us begin.

MR. FERGUSON: I will call Mr. Ike.

H A R R Y I K E, sworn.

DIRECT EXAMINATION BY MR. FERGUSON:

MR. FERGUSON: Your Honor, Mr. Ike is employed as a professional engineer and employed by the New Jersey Department of Environmental Protection and we subpoenaed him here today to testify as to the state of the water quality basin and areawide facility planning in the DEP under the relevant federal and state legislation, and to ask Mr. Ike if he could comment upon what he believes to be the proper planning techniques to be used by the New Jersey municipalities and, specifically, those in Chester Township and the surrounding area so as not to be inconsistent with the water quality planning, which his department is proceeding with.

BY MR. FERGUSON:

Q Mr. Ike, by whom are you employed?

A New Jersey Department of Environmental Protection.

Q In what capacity?

A I am the project director for all Sections 208 planning in the State of New Jersey and it is within the division of water resources within the department.

Q And are you a professional engineer?

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1 A Yes. I am, in the State of New Jersey.

2 Q Would you give the Court your educational back-
3 ground?

4 A I graduated from Newark College of Engineering in
5 1964 with a Bachelor's Degree in civil engineering and after
6 which I joined the U.S. Air Force from July of 1964 to July
7 of 1968, after which I was employed by the County of Middle-
8 sex for a period of six months.

9 I then joined the Federal Water Pollution Control
10 Administration, the predecessor of the U.S. Environmental
11 Protection Agency, and in February of 1969 was so employed
12 with them until April of 1974 when I joined the Department
13 of Environmental Protection.

14 Q What was your job in the Federal Water Pollution
15 Agency?

16 A I had two capacities there. Initially, I worked in
17 the construction grant activities. That was when the Federal
18 Agency would, as they still do, give construction grant
19 moneys to the municipalities to build waste water treatment
20 facilities.

21 In December of 1971 I took over as the chief of the
22 federal facility branch. Our job was to insure that federal
23 installations were meeting their environmental responsibilities.

24 Those were the basic two functions I performed while
25 with the federal E.P.A.

Ike - direct

1 Q Since being with the New Jersey Department of
2 Environmental Protection, what jobs have you had there?

3 A When I joined the Department in 1974 I was placed in
4 charge of the northeast water quality management study. This
5 was a study of the Passaic, Hackensack River basin in New
6 Jersey to assess the impacts on water quality from municipal
7 treatment facilities, industrial discharges, and so forth.

8 In April of 1976 I was placed in charge of the area-
9 wide planning, which was a similar type of planning activity,
10 except that it covered the entire state planning activities
11 being conducted by either the Department ourselves, or as in
12 the case of the upper Raritan, or other agencies such as
13 Middlesex, as an indication of the lower Raritan.

14 Q I believe you said you were a professional
15 engineer?

A Yes. I am.

16 Q Licensed by the State of New Jersey?

17 A Yes. I am.

18 Q Mr. Ike, would you tell us under what legisla-
19 tion your planning that you are now doing is authorized or
20 mandated?

21 A Well, it is mandated under Public Law 92500, the
22 Federal Water Pollution Control Act amendment of 1972. In
23 that Act, one of the sections, Section 208, calls for the
24 area-wide planning that we are currently performing.

25 There are other sections in the Act, also, that call

1 for water quality planning. Section 303 is another one.
2 Section 303 E planning is primarily related to point sources
3 that would be municipal treatment facilities and industrial
4 treatment facilities that discharge directly to a water body.

5 Section 208 goes a step further and examines the
6 impacts on water quality of other activities, such as the
7 use of lands, how they impact on the water quality, and
8 things of that nature.

9 It includes, of course, point sources and how all of
10 it fits together to develop a plan that would achieve and
11 maintain the water quality standards in the State of New
12 Jersey.

13 Q Would you tell us, if you can, what the stan-
14 dards are which the plans are designed to achieve? Is there
15 a standard set in federal legislation?

16 A Well, in federal legislation they use some loose
17 wordings where they talk about fishable and swimable waters.

18 Q Is there a year goal by which New Jersey or
19 the United States is supposed to attain that control?

20 A Yes. In 1983.

21 Q How can the term fishable and swimable be
22 translated in terms of what goals your planning must meet
23 or plan for?

24 A Well, in the State of New Jersey, as in all other
25 states, the states have to develop water quality standards.

1 These standards are based upon the goals and objectives of
 2 achieving and maintaining good water quality and these
 3 standards have been developed in the State of New Jersey
 4 and have been submitted into the federal agency and, in fact,
 5 once the federal agency adopts them, as I understand it, they
 6 become federal standards, too.

7 So, we do have the state standards and the goals and
 8 objectives of what we are trying to accomplish.

9 Q Do I understand from your testimony that ~~the~~
 10 federal government has not adopted New Jersey standards yet?

11 A I believe they have, yes.

12 Q Excuse me. We are discussing the standard for
 13 Peapack Brook in the Chester Township area. Do you know
 14 what that standard is?

15 A I believe FW 2 also considered a trout production
 16 stream the entire length.

17 Q Is that a standard one which has been adopted
 18 by New Jersey and, subsequently, by the federal government?

19 A Yes. That is in the New Jersey standards.

20 Q Now, you mentioned that Middlesex County was
 21 one planning body and that your department was the planning
 22 board for the Raritan basin. Would you clarify that for the
 23 Court, please?

24 A Yes. I will. Under Section 208 the governor of any
 25 particular state can designate an agency to do the planning

1 in various parts of the state, certain county agencies and/
2 or in the case of the Delaware Valley, the regional planning
3 commission, an interstate agency has been designated by the
4 governor to do the water quality.

5 MR. LINDEMAN: Did you say inter or inner state?

6 THE WITNESS: Inter state.

7 The Delaware Valley regional planning commission
8 has responsibility in Pennsylvania and New Jersey.

9 They are primarily a transportation planning agency,
10 but are now into water planning as well.

11 The point I am trying to make is that the
12 governor designated certain of these agencies. They
13 include the Delaware Valley regional planning commis-
14 sion, Middlesex County, Ocean County, Sussex County,
15 Cape May County, and Atlantic County, to do the plan-
16 ning in their respective areas.

17 Federal regulations requires that the governor
18 designate a state agency to do the planning where he
19 has not designated a different agency to do the
20 planning. So, therefore, in all the remaining parts
21 of the state, the State Department of Environmental
22 Protection has been designated by the governor to do
23 the planning.

24 Q And that would include responsibility for the
25 upper Raritan River basin in which Chester Township is
situated?

1 A That's correct.

2 Q Have you been the person at the DEP in charge
3 od 208 and 303 planning for the upper Raritan basin?

4 A Yes, I am.

5 Q And would you tell the Court the status of that
6 planning at the present time, where you are at and where you
7 hope to go?

8 A Okay. We developed and have published back in March
9 of 1977 what is called a Phase One water quality management
10 basin plan for the entire Raritan basin. It was published
11 in August of 1976, revised in March of 1977. This document
12 was prepared in accordance with the federal regulations for
13 Section 303 E planning and deals primarily with the establish-
14 ment of the waste load that municipal treatment facilities
15 can discharge to the Raritan River without degrading it.

16 What it does is provide the guidance for the people
17 within our department and the EPA that issues the construction
18 grants for upgrading and the construction of the municipal
19 treatment facilities.

20 Q Can I just ask you which plan comes first, the
21 plan allocating the waste load discharges and then the plan
22 which takes account of it?

23 First, is that a legitimate question?

24 A It is an intelligent question and when Public Law
25 92500 was passed, I think theoretically the 303 E planning

1 should be done and then the 208 planning and, then, Section
2 201, which is the funding and of Public Law 92500.

3 However, Congress at the time when they authorized
4 \$18 million for construction of municipal treatment facilities
5 nationwide did not want to hold that money up until planning
6 and activity took place. So, construction grants were made
7 and treatment facilities constructed by the municipalities
8 were upgraded slightly ahead of the planning. We are at
9 the point now where planning is starting to catch up with
10 that and we will eventually be ahead of that.

11 So, the sum and substance of what I am saying is that
12 planning activities should take place before the issuance of
13 construction grants, so that you know what levels of treatment
14 are necessary so that you don't overbuild or underbuild, and
15 this is starting to happen now.

16 The basin planning under Section 303 E and now Section
17 208 are providing that leadership for construction grant
18 people so that adequate planning takes place for the building
19 of these municipal treatment facilities.

20 Q I think you covered it but could you just tell
21 us in a little more detail the distinction and inter-relationship
22 ship between 208 and 303 plans?

23 A Okay.

24 Q 303 is the basin plan and 208 is the area-wide
25 plan?

A That's correct.

1 Q Can you just testify as to the inter-relationship
2 between those two?

3 A At the present time under the federal regulations
4 they are in essence one and the same. There was a court
5 decision in Washington D.C. when the Natural Resources
6 Defense Council sued the EPA at the time 208 planning should
7 be taking place in all areas, and prior to this the EPA
8 interpretation of the law was that it was only necessary
9 when the governor had designated an agency. At that time
10 the court ruled--Judge Smith I believe his name was--ruled
11 that planning had to take place wall-to-wall, if you will,
12 nationwide. In other words, every square inch of the country
13 would be covered by an areawide plan.

14 At that time when the federal EPA rewrote the regula-
15 tions, they combined 208 and 303. Prior to this 303 dealt
16 primarily with point source discharges, municipal treatment
17 discharges and establishment of waste load allocations. 208
18 goes further than that and explores the impact of non-point
19 sources. I use that word, non-point sources, meaning over
20 land runoff and runoffs from storm sewers and things of that
21 nature that have impact on water quality, so that it goes
22 further than it had in the past.

23 Q Is 208 and 303 planning being carried out by
24 your department for the Raritan basin at the present time?

25 A For the upper Raritan, yes.

1 Q You mentioned the 303 draft plan. I ask you
2 if this is a copy of the plan you refer to?

3 A Yes, It is.

4 MR. FERGUSON: May I have this marked for
5 identification.

6 THE COURT: Mark it as D-77 identification.

7 (Document referred to marked D-77 Idnetifica-
8 tion.)

9 BY MR. FERGUSON:

10 Q Would you give us ~~the~~ further steps for the
11 303 plan and the 208 plan, which will have to take place
12 before they can be issued and promulgated in final form?

13 A Would you repeat the question?

14 Q What remains to be done after that document?
15 What comes next?

16 A The federal rugulations state that--

17 MR. FERGUSON: Excuse me, one minute. My
18 notes indicate that D-77 was the new copy of the
19 state plan and that maybe this exhibit should be
20 D-78?

21 THE COURT: A new copy?

22 MR. FERGUSON: It was a colorful one which I
23 tried to get in, which was a reprint of the older one
24 which was not admitted into evidence. That was also
25 for identification.

1 THE COURT: Wasn't that one of D-65 through
2 D-67?

3 MR.FERGUSON: It was D-42, but that was the
4 first draft of it. Then, I had a printed brochure,
5 which was D-77.

6 THE COURT: Let us get rid of this witness and
7 I will check it out.

8 Well, let me see that synopsis.

9 This will be D-78.

10 (Last exhibit remarked as D-78 Identification.)

11 THEWITNESS: I believe the question was what
12 are we supposed to do with these basin plans once
13 they are developed?

14 Under federal regulations we were supposed to
15 take these, first of all the 303 E plan, and submit
16 it to the governor and he then reviews the plan and
17 certifies the plan and submits it to the Federal
18 Environmental Protection Agency. Under Federal
19 regulations they are then constrained from issuing
20 any construction grants or issuing any discharge
21 permits, federal discharge permits that are not con-
22 sistent with the approved plan. We have not done
23 that yet with these Phase One basin plans. We will
24 be doing that with the 208 plans. We will be incor-
25 porating what is in the Phase One 303 E plan and this

1 document will be incorporating that into the addi-
2 tional water quality plans that we are doing. That
3 document will then be submitted to the governor for
4 his certification and submittal to the Federal EPA.
5 At that time that document will then govern the EPA's
6 ability to issue construction grants and discharge
7 permits.

8 They will not be able to issue any discharge
9 permits which are in conflict with the approved plan.
10 There is also a state law that says the same thing,
11 as far as our commissioner is concerned.

12 Q I want to move for a minute to the state laws
13 implementing the 92500 planning and the discharge permit
14 system.

15 Would you tell us what New Jersey state laws
16 have implemented this planning?

17 A Okay. There was a bill--I don't know the exact legal
18 cite--but it was identified as Senate Bill 1222, which gave
19 the State of New Jersey the authority to issue discharge
20 permits.

21 MR. LINDEMAN: One minute. If this is a bill,
22 which is not legislation, I submit that there should
23 not be any further testimony about it.

24 MR. FERGUSON: It was signed into law by the
25 governor and I think we gave the Court a copy of it.

1 It was signed, I think, in December or April of 1977.

2 THE COURT: The discharge permits?

3 THE WITNESS: Yes. Section 402 of Public Law
4 92500 is the federal legislation that allows the
5 federal Environmental Protection Agency, or mandates
6 that they issue discharge permits. It is illegal to
7 discharge from a municipal or industrial treatment
8 facility without the federal permit.

9 BY MR. FERGUSON:

10 Q What about a package plant?

11 A The same thing.

12 Q A private package plant for, say, a shopping
13 center or a privately owned housing project?

14 A Exactly the same thing. Any wastewater that discharges
15 into a water body requires a permit.

16 In that Section 402 of Public Law 92500, it allows
17 ^{THE} state under certain conditions to take over that function of
18 issuing the permits with the federal oversight. The State of
19 New Jersey required legislation. In that legislation was
20 Senate Bill 1222, which was signed, if I am not mistaken, in
21 April of 1976. That was signed by the governor into law.
22 That bill allows the Department of Environmental Protection
23 to issue the permits and take over, if you will, the federal
24 permitting system. We are in the process of doing that now.

25 I don't recall the target date but at the time the

1 bill was signed we estimated it would take a good 18 months
2 to two years for the transition, so that we would then issue
3 the permits as opposed to the federal government.

4 Q Can permits for municipal systems be issued
5 right now if they do not comply with the draft 303 plan that
6 has been marked D-78?

7 A Legally, I would say they could, but what we are doing
8 in the department, since we do have the documents and we do
9 know what the point source configurations, if you will, should
10 be, or we feel it should be and, therefore, we are using this
11 for the issuance permits and, also, for the issuance of
12 construction grants.

13 So, in any basin plan where we have a draft, even
14 though it has not been certified and adopted by the governor
15 and approved by the EPA, we are definitely using it.

16 Q Can you refer to D-78 and tell us whether there
17 are any plans for a municipal or areawide sewer system in
18 Chester Township in New Jersey?

19 A I don't recall offhand. I would have to pick through
20 it.

21 Q Can you find that, and do it now, or would you
22 rather do it during a break?

23 A To save time I think it would be better if I did it
24 during the break.

25 Q All right. We will hold that.

1 You mentioned that Section 208 planning would
2 include point pollution problems, whereas 303 referred
3 mainly to point source discharge problems, is that correct?

4 A That's correct.

5 Q Can you tell us what work has been done in your
6 department to identify and come up with recommendations with
7 respect to non-point pollution problems in the upper Raritan
8 basin?

9 A Okay. Well, non-point sources come from a variety of
10 different types of land use, and what we are attempting to
11 do is, and, in fact, in the upper Raritan is one of the few
12 areas where we will have storm water sampling to sample the
13 discharge coming out of storm sewers, and we will be concen-
14 trating on different types of areas to try to determine and
15 quantify, if you will, the loading from non-point sources.
16 In other words, as it rains, as it is today, the rain water
17 picks contaminants and takes it either into the ground
18 water or into surface water through either running over the
19 land and into a river, or through the storm sewers; and we
20 want to try and quantify the impact of that.

21 There has been a lot of work done nationwide, but we
22 want to compare the literature values that have been published
23 with what actually is happening in certain areas. We will
24 be doing that in the upper Raritan. I am not exactly sure
25 where the locations of those are. My staff is still working

1 that out with the New Jersey Institute of Technology, which
2 will be the prime contractor.

3 Q Does your department have guidelines, or does
4 it advise municipalities about what strategies to use to
5 minimize non-point pollution problems in the upper Raritan
6 watershed?

7 A We don't have a direct responsibility per se. However,
8 my recommendation is that, first of all, the companion bill
9 -to the 1222 bill, which we talked about, is 5811A-1, which
10 was also called Senate 1223. I will correct that date. I
11 notice here that they were both signed on the same day. So,
12 it was approved April 25, 1977 and not April of 1976, as I
13 indicated.

14 This is the State Water Quality Planning Act and one
15 very important section of that Act is Section 10, which indi-
16 cates that once a 208 plan is approved by the governor and I
17 will quote from Section 10: "The Commissioner shall not
18 grant any permit which is in conflict with an approved area-
19 wide plan."

20 Our department issued quite a few permits. I believe
21 our division alone issues around 33 permits.

22 Q 33 different types of permits?

23 A Yes, stream encroachments.

24 Q What kind of permits are you talking about there?

25 A Okay. In our division we have stream encroachments and

1 we have diversion permits for surface waters and ground
2 waters, and permits to construct treatment facilities and
3 permits to operate the treatment facilities and extension of
4 sewer lines, which require permits.

5 Q What would the construction of a dam and creation
6 of a lake on a stream require?

7 A I would think that at least one stream encroachment
8 without question. I am not sure what others. There may be
9 one or two others besides that. That is really not my area
10 of expertise, as to the specific permits, but there would be
11 stream encroachment permits without question because there
12 is no question that a dam encroaches upon that.

13 I believe you were saying that no permits could
14 be granted that were in conflict with the areawide 208 plan?

15 A That's correct, an adopted areawide plan.

16 Q To what extent will that final 208 plan have
17 anything to say about land use within the area?

18 A In terms of non-point pollution? Well, some people
19 think a 208 plan is going to damage the land use plan. It
20 will not. However, we are going to look at it as closely as
21 we can, and this is part of the storm water sampling and part
22 of an agreement we have with the Department of Community
23 Affairs, the State Department of Community Affairs. They are
24 to try and determine the impact of various land uses on water
25 quality and, perhaps, indicate certain land uses that may

1 adversely affect different environmental sensitive areas,
2 steep slopes and different types of soil conditions inland
3 and wet lands and flood plains.

4 Q Will your department go through a process of
5 identifying those areas as part of the plan and saying that
6 they are appropriate for some uses but not for others?

7 A We hope to do that, yes. We will be mapping various
8 environmental sensitive areas to the best of our ability and
9 we will be mapping existing land uses through our contract
10 with the Department of Community Affairs and even projecting
11 some land uses in trying to assess the impact of those
12 projected land uses on water quality.

13 We are also going to be identifying specific construc-
14 tion activities and silva culture activities and to the
15 extent possible other activities. We are going to try and
16 identify what is called the best management practices. What
17 that means is that if you have a certain type of land use,
18 what is the best way to manage that land so as to not adversely
19 impact water quality, but for specific environmental sensitive
20 areas we would, we hope, indicate what types of land uses
21 should not take place and which would be an acceptable land
22 use.

23 Q To what degree of specificity will the 208 plan
24 that you are talking about be in terms of one particular site?

25 MR. LINDEMAN: I object to this line of question-

1 ing. For the purpose of redirecting it, perhaps,
2 so that we are back on track, I have been having
3 difficulty in the last ten or fifteen minutes in
4 following otherwise interesting testimony, insofar as
5 it relates to this case. That which has been testified
6 to, as I recall it, for the last ten minutes or so
7 has to do with prospective and speculative regulations
8 which do not presently exist, but which may exist
9 and I submit they have no bearing on this case. Such
10 testimony has no bearing on this case. I fail to see
11 it. Maybe I am missing the point?

12 MR. FERGUSON: Well, the point is, your Honor,
13 that the state of water quality planning in New Jersey
14 is relevant as to what the Townships and watersheds
15 should do in terms of planning at the present time.
16 The plans are not finished and it would be foolhardy
17 to plan for the future without taking account of a
18 federally and state mandated water quality planning
19 process, which is ongoing and which will be completed
20 in shortly into the future.

21 In short, I think the towns should keep their
22 options open and the state of planning in New Jersey
23 is a relevant input into any planning process at this
24 time.

25 MR. LINDEMAN: If your Honor please, I would

1 think that kind of evidence might be useful if we had
2 a situation similar to the moratorium condition that
3 existed with regard to construction in some munici-
4 palities, including Chester Township where buildings
5 could not take place and planning could not take place
6 until certain things happened, but that does not seem
7 to be the situation here.

8 MR. FERGUSON: Your Honor, if we zone for ten
9 thousand apartment units along the Peapack Brook,
10 I think we would be subject to severe criticism and
11 on the basis of the planning that is going on in
12 federally mandated directions to plan and give
13 permits and plan your land use and facilities for
14 water quality protection.

15 THE COURT: Well; there is some degree of
16 indefiniteness here in that plans have not been
17 approved.

18 I think it is sufficiently relevant to allow
19 it. I will overrule the objection.

20 MR. FERGUSON: I do not have much further to
21 go with this line.

22 Q Has your department identified any best manage-
23 ment practices in terms of what locations to recommend or
24 not recommend for inner city uses such as multi-family
25 housing with densities of five to ten units per acre?

1 A Have we done that yet? No. We have not. We would
2 hope to be able to do that. Given the staff limitations
3 now, we may not be immediately successful when the initial
4 plan comes out, but these are the kinds of activities that
5 we have continued to look at and continued to assess. I
6 think what is more important to assess and what the position
7 is that we have taken is to assess the impacts of a particular
8 activity on water quality, let us say, and provide information
9 to local decision-makers to be able to weigh two options,
10 so that if they go this way they are going to have to put
11 necessary controls in so as not to degrade water quality.

12 It is not so much to provide a block by block, if you will,
13 land use decision, but to provide the kinds of information
14 that says that if you do this you must do this so as not to
15 affect the water quality, which is the federal mandate.

16 Q Do you have an estimate when that planning will
17 be completed?

18 A Well, we hope to have a draft of the initial plan by
19 I believe the date is, July of this year, so that we have
20 sufficient time for public hearings and public comments prior
21 to the governor's certification come November. The grant
22 money that we have from the federal EPA to do this runs out
23 in November of 1978. So, therefore, we are going to have to
24 at least complete the initial plan by then.

25 The recent law signed by President Carter, which is an

1 amendment to Public Law 92500, clearly indicates at least
2 in my opinion that the EPA position and the federal govern-
3 ment's position is that an additional plan is necessary. As
4 I recall, there is six hundred million dollars nationwide
5 for planning over the next four or five years.

6 Q Do you have a target date other than July of
7 1978 for any concrete planning in New Jersey?

8 A Target? Well, at the present time the Middlesex
9 County plan has been submitted and is under review and we
10 expect the governor's certification within the next month
11 or two on that.

12 Q What about the upper Raritan basin?

13 A That was the time frame I indicated earlier.

14 Q July of 1978?

15 A Right, in the summer, right.

16 Q Are you familiar with the work of the upper
17 Raritan Watershed Association?

18 A To some degree, but not in a lot of detail, though.
19 My staff I am sure does.

20 Q On the table over there are natural resource
21 inventory maps of the upper Raritan Watershed Association
22 and marked into evidence are those maps along with the natural
23 resources inventory for the upper Raritan, which includes
24 Chester Township and some other parts of other townships as
25 Well.

1 Do you have an opinion as to what uses should
2 be made of that kind of information, and I would also include
3 in my question a map which has been marked D-52 in evidence,
4 soils which severly limit or complicate the developments?

5 Do you have an opinion as to what should be
6 done with this information by the municipalities in their
7 land use planning process, insofar as it affects water quality
8 protection.

9 A Yes. I believe that all municipalities wherever
10 natural resource inventories have been completed, or mapping
11 has been done for environmental sensitive areas like steep
12 slopes and so forth, should use these in their planning
13 activities. We are using these natural resource inventories
14 as much as we can. There is a very good wealth of information
15 on a lot of these and to do planning and to plan without con-
16 sideration of what is in these things in the impact of various
17 developments on water quality in my personal opinion, which
18 may not be the department's position, but in my personal
19 opinion and position it is foolhardy because what I think we
20 have to do is use whatever information is available to us in
21 planning.

22 We are definitely using these kinds of things in
23 expanding upon the basin plans and in developing the 208 plans,
24 and as years go on more information and better information is
25 going to become available and I think that has to be constantly

1 fed into the local land use planning for zoning and to the
2 decision-making process, the decisions being made by the local
3 governments.

4 MR. FERGUSON: Thank you, your Honor. At this
5 point I would suggest a five minute recess and we will
6 have the witness go through the reports to answer the
7 other question that I have.

8 THE COURT: All right.

9 (At this point there was a recess. After a
10 recess, the following occurred:)

11 BY MR. FERGUSON:

12 Q I will rephrase my question, Mr. Ike.

13 Would you tell us in your own words what Exhibit
14 D-78 says about the Chester Township area in terms of water
15 quality treatment and potential facilities?

16 A I will quote from Page VI-40.

17 MR. LINDEMAN: Well, just one moment, Mr. Ike.
18 I object. If it says nothing about any plans, I think
19 I probably would not object to it, but I am not sure
20 whether I will.

21 THE COURT: Why don't we let him say it and we
22 will give you a chance to object to it after it is
23 said.

24 Go ahead.

25 THE WITNESS: It says that the outlying areas

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THE COURT: What parts of Chester?

THE WITNESS: Well, it really does not indicate.

BY MR. FERGUSON:

Q What does it say about Chester Borough, for instance?

A Well, it indicates here, that the network of roads within the study area includes 24 and 206 which pass through the western portion of Chester Borough and although the area is sparsely developed at the present time, the area is suitable for future development and this would include Mendham and Chester Boroughs, portions of Mendham and Chester Townships along Routes 24 and the western areas of Chester Township along Route 206. Outlying areas in Chester and Mendham Townships may be best suited for individual disposal systems.

THE COURT: Do you want to object?

MR. LINDEMAN: No, I do not, your Honor.

THE COURT: I didn't think you would.

Q Mr. Ike, would you tell us the difference between the two phrases, one is water quality limited and the other is effluent limited, and tell us which of those, if one of

1 them, does apply to the Peapack Brook in Chester Township?

2 A Effluent limited and water quality limited are two
3 distinctions made for classification of streams. Peapack
4 Brook is designated as water quality limited area, or a water
5 quality limited stream, rather.

6 The distinction between effluent limited and water
7 quality limited is, very simply, that under the federal
8 water pollution act amendment of 1972, all discharges must
9 discharge at least the equivalent of secondary treatment,
10 what is normally left of treatment for a municipal treatment
11 facility. If that secondary effluent can be discharged into
12 the stream without causing degradation, it has to be effluent
13 limited. If a higher degree of treatment is necessary, so
14 as not to degrade the water quality in this stream, it is
15 considered a water quality limited. In the case of Peapack
16 Brook and, in fact, in the case of almost the entire upper
17 Raritan, you have water quality limited and higher degrees
18 of treatment are necessary and in many cases very high degrees
19 of treatment are necessary so as not to degrade the water
20 quality.

21 So that is the distinction between effluent limited
22 and water quality limited.

23 Q Now, would you tell us this? Are there differ-
24 ent kinds of solutions for pollution problems? I am referring
25 now specifically to structural and non-structural?

1 A Yes. There are. The construction of municipal
2 treatment facilities is an example of a structural solution.
3 In other words, you are building something to treat something.

4 A non-structural solution could be anything from
5 perhaps street sweeping or water conservation, or land use
6 planning, to keep pollution from happening. In other words,
7 a land use plan or putting brick in toilets to reduce flows
8 is not a structural solution. It is a non-structural solu-
9 tion and non-structural solutions are usually a lot cheaper
10 than structural solutions. Once you have things in place and
11 you have to build something to treat runoffs, it is a lot
12 more expensive than non-structural solution.

13 Q Is zoning a non-structural solution in the
14 definition of the department?

15 A Yes, I would say so, absolutely.

16 Q Can you elaborate at all on the subject you
17 just touched on and the cost of various solutions at different
18 stages?

19 A Well, I think if we look at the history and some of
20 the things that have happened in construction with storm
21 sewers or the building of facilities with acceptable or
22 adequate treatment facilities, which were not built, as men
23 moved in and as people moved in you had more and more water
24 problems. Had the right planning taken place in the beginning
25 a lot of this would have been mitigated. For example, this

1 is not in our area but in New York City where you have
2 combined sewers and where you have storm water sewers that
3 also carry the sanitary wastes, whenever you have a rain
4 storm like this, the storm water which goes out into the
5 Hudson River, or wherev er, carries along with it sanitary
6 waste. To separate that sewer now, well, I am not even sure
7 you can estimate the cost.

8 With the appropriate management techniques in certain
9 areas and perhaps reducing or eliminating storm sewers and
10 curbing all streets and allowing water to run off and perco-
11 late through the ground, as a natural condition, you would
12 not get as much storm runoff into the river, so that at a
13 later date if it is determined that it is a big problem,
14 you would have to put a treatment facility in and in the City
15 of Newark now to try and treat a runoff would be a herculean
16 task and tremendously expensive. I mean that it is almost
17 impossible and the cost is so far out of sight to try to
18 build a treatment facility to handle storm water. Had it
19 been done right in the first place, we would not have system
20 problems there as we do now.

21 Q Would it be correct to say that it is much
22 cheaper to plan around the problem before any structures
23 get built than it is to try and rectify a problem by building
24 structures to treat water after things get in place?

25 A Absolutely. In many cases once you have caused the

1 problem in the river, for example, regardless of what you
2 build you may not be able to change it. So, it is important
3 to do it right the first time, really. It is more expensive
4 to correct and in certain cases you might even have irrepar-
5 able damage.

6 MR. FERGUSON: That is all the questions I have,
7 your Honor.

8 THE COURT: Cross-examination.

9 CROSS-EXAMINATION BY MR. LINDEMAN:

10 Q Mr. Ike, is it fair to assume that as of July
11 of 1978 under the Section 208 regulations that there is a
12 great likelihood that there will be regulations and criteria
13 that will determine and control the method of discharge of
14 sewage into streams and watershed areas?

15 A Yes. That exists now throughout the federal permit
16 system.

17 Q And, therefore, if construction would take
18 place, for example, in the upper Raritan watershed area,
19 there are regulations which exist by which developers would
20 have to be guided?

21 A Absolutely.

22 Q And it is your view, is it not, that if those
23 regulations are observed and if permits are issued properly
24 as they must, that to the extent of your knowledge as of this
25 time the environment will be protected?

1 A Issuance of permits is predicated upon a waste load
2 assumption of what the waste load of a stream can take so
3 as not to degrade it.

4 Q Is it not also the fact that given these 208
5 regulations and whatever other regulations may exist, the
6 municipality as such does not have to be directly concerned
7 about the technicalities of the treatment and discharge of
8 sewage because the state government through its regulations
9 has taken up the cudgels and has assumed the responsibility
10 itself? Is it fair to say that?

11 A No. I don't think I would agree with that statement.

12 I would agree with the statement that the state is
13 establishing a waste load allocation and the state is or will
14 be issuing the permits, but I think you phrased it such that
15 the community should not be interested. The community is.
16 I assume the community would be responsible for whatever
17 treatment system they are building for their community. A
18 treatment facility just does not operate by itself. So, A
19 they have to be concerned about how it is operating and they
20 just cannot disregard that.

21 As far as the level of treatment is concerned, that
22 would be our job to kind of determine that, but if they are
23 going to build it, they are going to have to do some more
24 detailed planning themselves.

25 Q Well, of course, I would not suggest in any

1 question that the municipality is ignoring and have nothing
2 whatever to do with their environmental problems, but what
3 I am trying to get at is that so far as the regulations, the
4 technical regulations are concerned for the construction of
5 the sewage treatment facility, whatever kind it may be,
6 whether it is a septic system or really a drainage system
7 underlying any construction, or a sewage treatment plant,
8 that the engineering and technical criteria and requirements
9 are subjects which the city or municipality do not have
10 direct control over, but rather that the control now rests
11 with the state and its regulation, isn't that so?

12 A There are certain state regulations and federal regu-
13 lations that may outline certain minimums, but if a munici-
14 pality was to build a treatment facility, they would need
15 to hire an engineer that would do the detailed work. Treat-
16 ment plants could be designed in many different ways. Now,
17 to me, that is part of the technical part of it. The state
18 does not designate that you will build this type of treatment
19 plant, let us say an electrical filter as opposed to this
20 kind of plant, or an activated sludge plant. That is up to
21 them to decide.

22 We just say you cannot put any more out of the pipe
23 than this. You figure out how you want to treat it; and
24 there are various different treatment processes that they
25 could use. So, they have to be involved from that perspective

Ike - Cross

1 from what is coming out of the pipe by saying: Look, this
2 is the maximum you can put out. If you put out more than
3 that, you are going to violate the water quality standards.
4 So, from that end we have the say there, but they have to do
5 the design. We would do the review of t-at design to insure
6 that what they are going to build we would feel confident
7 is going to produce out the pipe that we feel is necessary.

8 As far as the construction of let us say septic
9 tanks, state Chapter 199, I believe, is the law that governs
10 that. There are certain guidelines in there for certain
11 size households and for certain size drainage fields, depend-
12 ing upon your perc rates and things of that nature; but the
13 application of those guidelines has to be done at a local
14 level wherein your boards of health or county engineering or
15 a municipal engineering, whoever it is, would have to look
16 at these things.

17 Q A municipality, however, at least under the
18 state regulations, state and federal laws as you know it,
19 has no conferred right to require that whatever discharge
20 is permitted under federal regulations or state regulations
21 must be even tougher or stricter than the state or federal
22 regulations; is that not so?

23 A I am not aware of any local regulations or ordinances
24 that require that. From my perspective the state standards
25 would be the ones that they would have to meet.

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MR. LINDEMAN: No further questions, your Honor.

REDIRECT EXAMINATION BY MR. FERGUSON:

Q What is the job the municipality has in terms of strategies for combatting non-point pollution?

A I am sorry?

Q Mr. Lindeman when he asked you questions elicited testimony from you--and I think my reading of it was accurate--that you were talking about point discharges and there was treatment facilities?

A Yes.

Q What about non-point discharges?

A Well, I think at the present time with the planning activities that are going on and with the natural resources inventories that are being prepared, I think the municipalities have, if not a legal responsibility, have a moral responsibility to insure that they examine whatever is available so as not to put something in place that is going to degrade the environment. In other words, take advantage of all that is available.

Q Do you know whether any permits are necessary for a storm water discharge pipe into a brook under the regulations and laws as you have been talking about?

A Under federal regulations? I don't believe so. At the present time the federal environmental protection agency

1 is not issuing permits for storm sewers. I am not sure,
2 but my memory is a little foggy now from several years ago,
3 but my memory serves to tell me that there may be provisions
4 in there to permit storm sewers. I don't recall. It is not
5 being done at the present time.

6 Under state law, I am not sure exactly what 1222 says.
7 But depending on how a storm sewer comes into a river, they
8 may be required to get another permit, a stream encroachment
9 permit.

10 Of course, every time you put a storm sewer in, you
11 are concentrating the runoff and things like that into a
12 particular part of the stream and you can change the whole
13 flooding characteristics of that stream and can cause severe
14 problems down stream.

15 Q Is a discharge pipe into a river a point source?

16 A No, not in our view. I use it as an intermittent point
17 source because, really, it does discharge into a point but
18 only discharges when it is raining. So, it is not a continu-
19 ing point source. It is an intermittent point source and
20 does not contain contaminants from pollution that you would
21 normally find in domestic wastes, which is runoffs. It picks
22 up pollutants in the streets from running off lawns and things
23 of that nature, but it is not really a continuous point
24 source that requires a permit.

25 BY MR. LINDEMAN:

Q Are there not regulations that exist respecting

1 the causes--I am sorry. Were you finished? I thought you
2 sat down?

3 MR. FERGUSON: Go ahead: ;

4 RECROSS-EXAMINATION BY MR. LINDEMAN:

5 Q There are not regulations that exist regarding
6 the causes or effects of non-point pollutions, or at least
7 they do not exist in your department, is that not correct?

8 A I am sorry. I missed the question.

9 Q Q There are permits and regulations and criteria
10 that have to be met so far as point pollution discharge of
11 waste into streams and into environments are concerend, isn't
12 that not so? That is what your department has to do with it
13 and that is what D-78 for identification talks about?

14 A That's correct.

15 Q Is it not correct that similar regulations and
16 criteria in any fixed form do not exist so far as non-point
17 pollution is concerned, or those factors which cause non-point
18 pollution?

19 A Well, non-point pollution is a very broad definition.
20 One example where there is a state law that does cover it and
21 very specifically is Chapter 251, which deals with sediment
22 erosion control from construction. That very sediment carries
23 off by rain into the rivers and is definitely a non-point
24 souce of pollution, and Chapter 251 definitely deals with
25 that. So there are certain regulations. I do not purport

1 to know them all.

2 As far as a storm water pipe, there may be. I don't
3 know.

4 Q Do you know what other kinds of regulations
5 there may be that actually state the law or state the regu-
6 lations on non-point pollution other than the sediment control?

7 A Well, Chapter 199, which deals with septic tanks is
8 one.

9 Q What does that do?

10 A Basically, it sets up the design criteria, if you
11 will, for septic tanks and the type of soils where septic
12 tanks can be built at, you know, non-point sources. A septic
13 tank field would be a non-point source. Waste from that
14 could either reach ground water or, perhaps, through different
15 types of soils, perhaps, that may not be able to percolate
16 down into it and underground it would make its way to a
17 stream.

18 Q How does the sediment control regulation work?

19 A That is operated primarily by the state soil conserva-
20 tion committee, which is part of the New Jersey Department
21 of Agriculture. Conservation districts are the ones that
22 issue them. There are certain guidelines for construction
23 activities and how to reduce sediment erosion, as I understand
24 it. This is getting a little out of my field but, as I under-
25 stand it, the soil conservation district office reviews the

1 sediment and erosion control plans prepared by the contractors
2 that are going to do the building and I believe there is a
3 permit involved there, too, but they are issued by the soil
4 conservation districts, which are part of the New Jersey
5 Department of Agriculture.

6 Q You don't know what it is that requires that
7 such a permit be obtained? There must be something that has
8 to happen?

9 A The contractor would have to submit a plan to the soil
10 conservation district office and they review it and approve
11 it, or suggest changes. They do the same thing in agriculture,
12 although that is not mandatory. Agricultural lands have run-
13 off problems and there are various types of best management
14 practices, techniques if you will, to control that runoff.

15 MR.LINDEMAN: May we approach the bench for
16 a minute, your Honor?

17 (After a short off record discussion, the
18 following occurred:)

19 BY MR. LINDEMAN:

20 Q Do you know whether there is a law or a regula-
21 tion that exists that requires that a sediment control permit
22 or sediment permit must be obtained when you were building
23 or where you are causing a certain amount of building to be
24 done?

25 My question is this, Mr. Ike: Certainly, every

1 person that builds a house, a small house or other kinds of
2 limited construction, do not necessarily have to obtain a
3 sediment control permit, and I am wondering if you can tell
4 me what it is that a developer contractor must be doing
5 before he is required to obtain such a permit.

6 A I am going by memory now, but I believe Chapter 251--

7 Q Is it pure speculation or guesswork, Mr. Ike?

8 A No.

9 THE COURT: It is in the statute and I believe
10 it describes the number. I had a case on it. I
11 believe it describes the number of dwellings being
12 utilized and there is also a relationship if it is a
13 single family and there is also a relationship to the
14 area being developed, but that recollection is of two
15 or three years ago.

16 THE WITNESS: That is the same recollection I
17 have. Single family houses are exempted unless it
18 disturbs more than, I believe, five thousand square
19 feet.

20 BY MR. LINDEMAN:

21 Q In any event, there are regulations that control
22 sediment deposits and permits must be obtained when a certain
23 level of construction is reached, is that not correct?

24 A Well, I think what it requires is that a plan be
25 developed to keep the sediment from leaving the site; in other

1 words, if you keep soil on the site so that it does not run
2 off into the stream it may be detention basins, or it may
3 be any number of different things in which I am not an expert
4 at, but there are control Techniques and the contractor would
5 have to show on his plan how he is going to keep the sediment
6 on the piece of property, as opposed to having it run off.

7 Q And a permit nevertheless is issued by some
8 state agency, the Department of Agriculture?

9 A The soil conservation districts have this responsibil-
10 ity, whether it is just approval of the plan, or they cannot
11 construct until there is an approval plan. I do not know
12 the mechanics of Chapter 251, but I do know the law exists.

13 Q Similarly, with septic systems there is some
14 kind of a state regulation or regulatory body that has to do
15 with the issuance of permits when certain kinds of septic
16 tanks are to be installed and used?

17 A Well, Chapter 199 covers the septic tanks and I believe
18 it is 49 dwelling units. It may be 49 or it may be 24, I
19 am not sure.

20 Q Mr. Ike, I am really not so much getting at
21 the number of and characteristics of construction but, rather,
22 that there is a state regulation and a state authority which
23 has to do with that kind of control, and that is the fact,
24 is it not?

25 A The majority of your controls of septic systems is at

1 the local level, unless you are talking about the big ones.
2 The state sets out guidelines and it is implemented and
3 carried out at a local level and into the local level.

4 Q What other kinds of non-point controls do you
5 know of that the state concerns itself with, insofar as the
6 regulation permit the issuance of permits and that kind of
7 thing are concerned?

8 A Sanitary land fills, waste coming down, rain waters
9 coming down on that, which leeches through that and cannot
10 find its ground water or surface water. The state has a
11 responsibility for issuing permits for the operation of them
12 and the location of them, and so forth.

13 I am not sure of any other ones that pop immediately
14 into mind, but that one did.

15 Q What kind of land fill is that?

16 A Sanitary land fill.

17 MR. KINDEMAN: I have no further questions,
18 your Honor.

19 MR. FERGUSON: Nothing further.

20 THE COURT: Thank you. You are excused.

21 (After the luncheon recess, the following
22 occurred:)

23 J O H N K E E N E, sworn.

24 MR. FERGUSON: Professor Keene is a professor
25 of city and regional planning, Department of City

1 Planning at the University of Pennsylvania and
2 Philadelphia.

3 He will testify to the import of the federal
4 and state legislation in the land use planning and
5 water quality preservation areas, and the import of
6 and impact of that legislation upon land use planning
7 in New Jersey and the proper way to go about land use
8 planning in a critical watershed area, and he will
9 have a few comments about the land use planning
10 environment in the Mount Laurel-Madison Township era
11 in New Jersey, as it is affected by some of the problems
12 that he will testify about.

13 THE COURT: All right.

14 DIRECT EXAMINATION BY MR. FERGUSON:

15 Q Professor Keene, by whom are you employed?

16 A The University of Pennsylvania.

17 Q In what capacity?

18 A Associate Professor of City and Regional Planning.

19 Q Would you give us your educational background
20 please?

21 A I received a BA from Yale University in 1953 and a
22 J.D. from the Harvard Law School in 1959 and I spent a little
23 less than five years practicing law at the law firm of Pepper
24 and Hamilton in Philadelphia. I then went to school full-
25 time at the University of Pennsylvania to study site planning.

1 It is a two year graduate program and I got my masters in
2 site planning from Pennsylvania in 1966.

3 Q Are you a member of any profesional organiza-
4 tions or institutes?

5 A Yes. On the legal side I am a member of the Philadelphia
6 Pennsylvania and American Bar Associations. I am on the
7 committee on Urban Environmental Planning and Zoning of the
8 American Bar Association. On the planning side I am a full
9 member of the American Institute of Planners and have been
10 the president or, rather, the chairman of the Department of
11 Planning and Law in the American Institute of Planners.

12 Q Are you a professional planner?

13 A I am not licensed to practice as a professional planner
14 in New Jersey, if that is your question.

15 I am really a teacher of planning and planning law,
16 rather than a professional planner.

17 Q Would you give us a brief resume of your former
18 employments in the planning area?

19 A The first major undertaking that I was involved with
20 was a two year study in the watershed of the upper east
21 branch of the Brandwyne Creek, which is a 37 mile watershed
22 about 35 miles west of Philadelphia. It is near Downingtown,
23 if you are familiar with that area.

24 That was a multi-disciplinary effort to develop better
25 ways of suburbanizing essentially rural lands, using innovative

1 techniques and based upon comprehensive surveys, hydrological
2 conditions and ground cover and topography and so forth.
3 It was an attempt to minimize the impact of new developments
4 on the hydrological system through the use of innovative
5 land use controls. That took place between 1966 and 1968.

6 Since then, without going into extensive details, I
7 have been involved in research or consulting, or writing,
8 which is generally with land development regulations.

9 I have written or edited books or articles on such
10 topics as the constitutional basis of federal regulations of
11 land, transferrable development rights and plans, unit
12 developments and different residential assessments of farm
13 lands, and an article on the Mount Laurel decision here in
14 New Jersey.

15 Most of them have dealt with the general area of
16 innovations and land use control protection of open space
17 and preservation of farm lands.

18 Q Have you served as a consultant to the U.S.
19 government?

20 A Yes. One of these projects was as a consultant to the
21 president's council on environmental quality, one dealing
22 with the evaluation of different residential assessments of
23 open space and farm lands, and to see whether it was an
24 effective method of preserving farm lands and open space.

25 I have been also a consultant to the E.P.A. in connec-

1 tion with relating comprehensive planning and environmental
2 impact statements, as required by the national Environmental
3 Policy Act.

4 Q I show you a document and ask you if it is a
5 detailed curriculum vitae, dated November 1975.

6 A Yes.

7 Q Is that your curriculum vitae?

8 A This is the curriculum vitae as of November of 1975.

9 MR. FERGUSON: I would offer this in evidence
10 to save the time of going through it?

11 MR. LINDEMAN: No objection.

12 THE COURT: Mark it in evidence.

13 (Marked D-79 Evidence.)

14 THE COURT: Do you have any questions on his
15 qualifications?

16 MR. LINDEMAN: I have none, your Honor.

17 BY MR. FERGUSON:

18 Q Professor Keene, at my request did you undertake
19 a review of certain materials dealing with Chester Township,
20 New Jersey? A. Yes. I did.

21 Q Would you briefly tell us what you reviewed and
22 what you did at our request?

23 A At your request I took a rather broad look at some of
24 the federal and state statutes which bear on the undertaking
25 of a township like Chester to plan developments within its

1 borders, so that any documents, I referred to were just not
2 those relating to Chester Township but, also significant
3 federal and some state agencies.

4 Did you ask me specifically about Chester Township,
5 or generally about all documents?

6 Q Both. First, tell us what you specifically
7 reviewed about Chester Township?

8 A I looked at the comprehensive plan, drafted in 1974,
9 and the zoning ordinance of, I think August of 1976, as
10 amended in October.

11 Q What other materials did you review?

12 A I also looked at the site plan for the Caputo tract.

13 Q I show you P-1 in evidence and ask you if that
14 is it?

15 A That is a document that I have a copy of. That is
16 the document.

17 Q What else did you review?

18 A In Chester Township?

19 QQ Yes, first in Chester Township?

20 A Those were the documents which I reviewed there.

21 Q Then, what other materials did you bring within
22 the scope of your work?

23 A I looked at the Morris County comprehensive plan, or
24 master plan, to see what indications and what plans or sugges-
25 tions it had for the Chester Township and Chester Borough.

1 Q Are you referring to the future land use ele-
2 ments of Morris County master plan, P-13 in evidence?

3 A Yes.

4 Starting also at the federal level, I reviewed several
5 Acts, the federal water pollution control Act amendments of
6 1972, as amended in 1977; the clean air Act of 1970, as
7 amended in 1977; and the safe drinking water Act of 1974;
8 and the housing and community development Act of 1974, as
9 amended in 1977; and the resource conservation and recovery
10 Act of 1976; and the national flood insurance act, which is
11 part of one of the housing acts; and the Civil Rights Act,
12 the federal Civil Rights Act of 1964 and 1968, and I looked
13 specifically under the implementation of the federal water
14 pollution control Act of 1972 and at the Section 303 E phase
15 One river basin plan, which Mr. Ike discussed this morning;
16 and the work program for Section 208 planning from the state
17 office, dealing with the upper Raritan basin within which
18 most of Chester Township is located.

19 I also reviewed the Jersey Municipal Land Use Act and
20 a couple of reports, the most important of which was the
21 governor's commission to evaluate the needs for capital
22 facilities, which was published, I think, in 1975.

23 I think that pretty well covers the documents which
24 I have looked at specifically.

25 Q As to the governor's commission to evaluate

1 capital needs, I show you D-66 for identification and D-67
2 for identification, are those the documents you referred to?

3 A I examined the summary reports, which is D-66.

4 Q As a result of your review did you determine
5 which if any of those federal and state legislation, or those
6 documents including the governor's commission, were relevant
7 in your opinion to the problem of land use planning in Chester
8 Township? A Yes. I did.

9 Q And would you tell us first which ones were
10 relevant and, then, which ones you found most relevant in
11 terms of your opinion as to what should or ought to be done
12 in Chester Township?

13 A All right.

14 My assignment was to relate these principles and
15 policies and requirements of these various federal Acts to
16 the undertaking to plan and to zone in Chester Township.
17 Some of these Acts have more relevance than others and more
18 direct application, and I would like to eliminate the ones
19 which have the least relevance and, then, focus our discussion
20 on the ones which have the most.

21 Q Please do, sir.

22 A First of all, the clean air Act of 1970, as amended in
23 1977, through its prevention of significant deterioration and
24 new source review requirements would be applicable if a large
25 industry went in to locate in Chester Township. Even before

1 that, it is relevant in the planning of any industrial area
2 or large scale commercial areas which the Township may wish
3 to locate within its boundaries and it would be important
4 for the planners to familiarize themselves with the air
5 quality statements and implementation plan and air quality
6 management district and the regulations for that district
7 within which Chester Township is located, which is the New
8 York-New Jersey-Connecticut region.

9 It is just in the outer edges of that region not directly
10 influenced by some of the serious air quality problems which
11 exist in other parts of the region, but still it is within
12 that region.

13 So, I think that as a matter of general planning and
14 general understanding in laying out the different land use
15 districts in Chester Township, the Township government and
16 planners would want to familiarize themselves with the effluent
17 or emission limitations, which are applicable to different types
18 of districts with the ambient air quality standards which are
19 applicable to the region and with the actual conditions in
20 the air from time to time, in order to determine whether it
21 was appropriate to have a large industrial zone, or what kind
22 of industry might be appropriate to try to entice to come in.

23 The Housing and Community Development Act is basically
24 a special revenue sharing act. The only impact it has on
25 local government is if a local government wishes to make

1 application to the community development block grant funds.
2 It is my understanding that Chester Township has not made
3 such an application, so that it does not have to worry about
4 the Housing assistance plan requirements and the need to
5 make arrangements for low and moderate income families and
6 so forth, which would be imposed as a result of housing
7 and community development acts.

8 It does have these obligations under the Mount Laurel-
9 Madison Acts, which is part of what all this litigation is
10 about, but because it has not made application under the
11 community development program, this act is not relevant or
12 applicable to it.

13 The national flood insurance program requires that
14 the Department of Housing and Urban Development designate
15 flood prone areas throughout the country. HUD has done this
16 in Chester Township along Peapack Creek and I know they have
17 done it. I *Have* seen a rather sketchy map indicating the
18 areas. So I am not in a position to testify as to whether
19 there is any bearing on this particular litigation, but my
20 recollection is that there are some areas along there, but
21 at any rate this is something which the Township has to be
22 concerned with that it will not be eligible for any flood
23 relief, flood disaster relief, nor will the owners of houses
24 in designated areas be eligible for flood insurance and flood
25 disaster insurance unless the township adopts appropriate land

1 use regulations, which are designed to either keep down
2 developments in flood prone areas, or insure that they are
3 constructed in such a way that they will be less amenable
4 for being damaged in a flood. Again, this is not a major
5 factor, but one which should be taken into consideration in
6 developing land use plans.

7 The resource conservation recovery Act completes the
8 triumvirate, the trinity of clean air, clean water and now
9 clean land disposal of waste.

10 Q Does that have any application in Chester Town-
11 ship?

12 A That Act was passed in 1976. The EPA has not yet
13 issued the first major set of regulations. I understand
14 from talking to the solid waste office yesterday that the
15 administrator of the EPA expects to issue his regulations
16 around the first of February. These establish the criteria
17 which distinguish between open and sanitary land filling.

18 There was some discussion about sanitary land fill
19 earlier today. Once these criteria are established, it
20 becomes the responsibility of each state, often through
21 regional planning agencies, something like the 208 program,
22 to identify all the dumps in the state and, then, to estab-
23 lish compliance schedules by which open dumps would be phased
24 out and proper environmental and sound sanitary land fills
25 would be phased in.

1 There is a provision in the law which wants no open
2 dumping after 1983 under any circumstances and only permits
3 open dumping upon anyone if it is under a compliance schedule
4 with the state or regional agency. Now, if Chester Township
5 has an open dump at this point, or if its solid waste disposal
6 needs come to the point where they are going to have to dis-
7 pose of something within the Township or adjacent townships,
8 those disposal techniques will have to comply with the state
9 plan which is developed as a result of the resource conserva-
10 tion program in 1976. So, therefore, the impact will not
11 have strong impact.

12 The main impact will be that if there is any solid
13 waste disposal in the watershed of Peapack or Burnett Creek
14 or the Black River, it will be environmental. There will be
15 fewer adverse environmental impacts in the form of leachae,
16 or other kinds of runoffs from solid waste disposal sites.

17 Q Would you turn to the water pollution statute?

18 A Well, there is a safe drinking water Act before we
19 get to that. The federal Water Pollution Control Act
20 basically establishes criteria for drinking water by the
21 EPA, the safe drinking water statute.

22 Since Peapack is designated as a water supply creek
23 or water supply stream in the section 303 E plan and, pre-
24 sumably, will remain as such, it is especially important to
25 make sure that the water quality in that creek is maintained

1 at the highest level possible, or at least at the level
2 which will be mandated by the Safe Drinking Water Act of
3 1974.

4 Okay. I think that pretty well covers these other
5 Acts which bear on this, but not quite as significantly as
6 the Federal Water Pollution Control Act.

7 Q Would you turn to that Act, please?

8 A Yes. I would like to focus my testimony on the land
9 use implication of that Act. To do that it is necessary to
10 outline the general structure of the Act and specifically
11 the implementative sections and devices which it envisions.
12 It starts off with the EPA establishing the effluent limita-
13 tions, which means that where there is a broad class of
14 industry for sewage treatment plants the EPA has established
15 criteria relating to a series of pollutants and says, in
16 effect, the effluent from one of these treatment plants cannot
17 contain more than a certain part and certain number of parts
18 per million or a certain percentage of different kinds of
19 pollutants and it may not be above a certain temperature.
20 These are industrywide for all sewage treatment plants. The
21 standards with respect to sewage treatment plants is secondary
22 treatments, which means removal of solids and some kind of
23 filtration or bio-chemical treatments which reduce the
24 effluent flow to about thirty per cent of what it otherwise
25 would be. After these effluent standards are set each

1 station was required to study every stretch of running water
2 and every stream and every stream segment in its borders
3 and in the light of the EPA's effluent standards, establish
4 the purpose for which that stream would be used and, then,
5 the water quality standards so that, for instance, with Pea-
6 pack Creek, as Mr. Ike testified this morning, this has been
7 designated as a water supply stream with, I think, the second
8 highest stream quality standards, that which is for the pro-
9 duction of trout and it has to be cold enough and clean
10 enough and have enough oxygen in it so that the trout can
11 spawn and reproduce there as well as live there.

12 So, New Jersey and all other states have done this
13 for every segment of every stream around the country.

14 Now, after this was done there are five levels of
15 planning activities which were established by the 1972 Act.
16 The broadest is established by Section 209 and refers to the
17 so-called level B planning activities under the water
18 Resources Act of 1965. This does not have relevance to this
19 basin in New Jersey. Only the Delaware and Hudson are having
20 these broad level and long range almost economic resource
21 analysis studies being done. So, we don't have to worry
22 about that one.

23 The next level is the Section 303 E plan, which Mr.
24 Ike discussed this morning. This is the major element of
25 the state's continuous planning process. It is basically a

1 five year plan which seeks to get full information on
2 water supply and characteristics of water throughout the
3 state and, then, to develop several different levels of
4 strategy, ranging from a five year down to a one year, so
5 that sewage treatment plants and industrial discharges mostly
6 focus on point sources, which can be brought into a compre-
7 hensive picture so that the state will know what is going
8 into every stream and where and what the pollutant content
9 of every discharge is, and it will include plans for improv-
10 ing the quality for increasing the level of treatments and
11 so forth in its discharge.

12 The third planning level is the so-called areawide
13 waste treatment planning under Section 208. This was envis-
14 ioned by Congress as being the key stone, really the center
15 point of the whole federal Water Pollution Control effort.
16 Taking the broad input from the 303 E plan and the basinwide
17 plans and then looking at the populations in the area and
18 the water quality conditions in the area and the local land
19 use planning and zoning activities and the proposed popula-
20 tion development projection and so forth, the 208 plans
21 which are due November 1 of 1978 were designed to lay the
22 groundwork for detailed regulations of everything which
23 happens to every stream and every lake in that particular
24 area. The 208 plan includes both point source discharges
25 and non-point sources. Now, this is the 208 plan.

1 Then, the 208 programs which will follow them are
2 the main sources of regulation of non-point sources and we
3 are finding more and more that non-point sources pollution
4 is the most serious problem. They run off from farm lands
5 which have sediment and silt in it, herbicides and highly
6 nutrient materials and so forth. They run off from the
7 woods and, of course, urban runoffs from streets directly
8 into streams, or through storm sewers contribute a tremendous
9 background amount of pollution, so that even, obviously,
10 in a city like Newark or Camden, if there were no industrial
11 discharges from pipe and no municipal discharges from a pipe
12 the stream would still be polluted to a certain level because
13 of everything that washes off the streets and everything that
14 washes off the farms that may be up stream. So that the
15 Section 208 program is a special effort to deal with the
16 kinds of non-point source pollutions which exist in Chester
17 Township where you have farming and where you have construc-
18 tion and you will have sediment coming in the stream from
19 those activities.

20 The fourth level has to do with the planning of the
21 sewage treatment facilities, the so-called Section 201 pro-
22 gram. Here, the emphasis is on what kind of facilities should
23 be built, where and what kind of sewage treatment plants,
24 what kinds of sewer interceptors, sewer trunk lines and so
25 forth should be built there.

1 The final planning level has to do with assigning
2 priorities to the Section 201 facility construction projects
3 which a particular state proposes in a particular area. There
4 is much more demand in New Jersey for Section 201 construction
5 grant funds than there is money for. So, Section 205 requires
6 the state to assign a priority to a healthy EPA and decide
7 which projects are among those which New Jersey says are
8 very important and should come first.

9 So, you have this five level planning activities and
10 really, as far as Peapack Creek goes it is a four level plan-
11 ning activity.

12 Q Can you go ahead and relate that, if you can,
13 to the problems that face Chester Township in this land use
14 plan?

15 A Right. Now, to implement these plans there are
16 basically four programs: The sewage plant construction
17 grant programs, the 208 management program, the national
18 pollutant discharge elimination system program, and the
19 dredge and fill permit program, which has been run by the
20 U.S. Army Corps of Engineers. All of these are the ones
21 when the 208 plan is completed, which is supposed to be
22 by November of this year. All of these activities, these
23 four implementative techniques, will be coordinated to the
24 Section 208 management activities, partly in the state and
25 partly in each of the townships in the region governed by

1 this particular Section 208 plan. So that, for instance,
2 if Peapack Creek, according to the Section 303 E plan and
3 the Department of Environmental Protection, classified
4 Peapack Creek as a water quality limited stream, which means
5 that even if the EPA effluent standards were met all along
6 the stream, there would still be water quality violations.
7 These water quality violations relate primarily to heat
8 because of low flow and high fecal coliform counts, which is
9 pollution coming from cattle or sewage waste. This means
10 that because of the existing background conditions, even
11 the regular EPA effluent standards would have to be made more
12 stringent in order to allow Peapack Creek to meet the water
13 quality standards of production which the State Department
14 of Environmental Protection has established.

15 Now, this means that structural techniques and
16 structural solutions in the form of storm sewers or sewage
17 treatment plants or catch basins probably would not be enough
18 to maintain Peapack Creek at the water quality standard
19 levels which the state said should be maintained at, especially
20 since it is a current water supply source and if there is a
21 reservoir built downstream, which I understand is a possibil-
22 ity, at the confluence of the north and south branches, it
23 would become a more important water supply stream.

24 Since the structural solution will not be enough to
25 handle or maintain the stream at the appropriate water quality

1 standards, non-structural techniques will have to be followed
2 by all the townships and all local governments whose lands
3 drain into this water supply creek.

4 What does this mean? Non-structural approaches involve
5 zoning and involve cleaning and involve trying to keep urban
6 development away from streams. One of the things which we
7 developed in this study on Brandwyne, which I mentioned, was
8 that the closer that the urban development is to a stream,
9 the more urban development there is in a watershed, the
10 greater of several environmental effects. First of all, the
11 more urban development there is the more impervious the soil
12 and the more impervious cover there is. What is the effect
13 of this? It means that during rain storms, like we have
14 today, more water will run off into the stream and less will
15 infiltrate into the ground. This means that flooding will
16 be higher and more rapid when there is a heavy storm, so that
17 as a result of the higher flooding and higher rate of flow,
18 there will be bank erosion and the streams will be widened
19 because the rushing water will cut away the banks because of
20 the fact that there is less infiltration into the ground
21 because it is covered with a driveway or a house or whatever.
22 And there is less infiltration into the ground water and,
23 therefore, at the periods of low flow at the end of the time
24 between the rains, the flow in the stream will be lower and
25 where the flow is lower, the temperature will be warmer and

1 given an equal load of pollutants, if you have less water
2 the pollution level will be higher because there is less
3 water to dilute it. When you are dealing with a water supply
4 stream, this means that a higher level of treatment will be
5 necessary in order to make the water potable, thus increasing
6 the cost downstream.

7 The farther away a development takes place from a
8 stream like Peapack, especially if you buffer areas between
9 developments and the stream, the more these effects are
10 negated. In other words, as the water flows across lands,
11 from the house or commercial area, it can sink into the
12 ground and recharge the ground water and be cleaned either
13 by the grass or trees or leaves which are lying on the
14 surface of the ground. As it infiltrates through the ground
15 by the particles of earth, by the time it reaches the ground
16 water and ultimately the stream, it is in much better shape
17 than it would be if it ran directly off the impermeable
18 surfaces into the stream.

19 So, the non-structural methods of reducing water
20 pollution are especially important in an area like Chester
21 Township, which are at the head waters of three streams,
22 the Black River, Peapack and Burnett Brook, all of which are
23 in pretty good shape right now, according to the 303 E plan.

24 Q Would you comment on the use of zoning as a
25 non-structural technique in land use planning for the prevention

1 of pollution and enhancement of fresh water quality?

2 A Well, yes, this relates to the general principle that
3 if you can prevent development from areas very close to or
4 adjacent to streams, and the farther away you go the better,
5 you will minimize the impact of that development on the stream.

6 Therefore, it is possible through flood plain zoning
7 to prevent developments in flood plains and I think that is
8 possible in New Jersey and, then, to gradually increase
9 density as you move away, let us say from a 100 foot or 300
10 foot buffer on either side so that less development takes
11 place near streams and as you get 300 or 400 feet away it
12 is possible to have more development which will have less
13 effect on the system than if it were close to the stream.

14 It is also possible through your land development
15 ordinance to require special kinds of catch basins or other
16 techniques for retarding the flow of rain water directly
17 into the stream. I would like to come to that general
18 question of zoning further when we consider what steps the
19 Township would like to go through in responding to the
20 Madison case, but as a general matter this answer responds
21 to your question.

22 Q Why don't we move into that. Have you an opin-
23 ion or have you reviewed the obligation of a township to pro-
24 vide its fair share of housing as a result of those court
25 decisions?

A Yes, I have.

1 Q Would you relate your opinion in view of that
2 to land use planning in a watershed area, as you were just
3 getting into a moment ago?

4 A Okay. It seems to me th~~e~~ Oakwood-Madison case was
5 fairly explicit in the procedures which township developers
6 and township planners should follow in trying to make a bona
7 fide effort to meet the mandates of that decision.

8 Now, as you know, there are two aspects of it. First
9 of all, is the fair share aspect and, second, is the environ-
10 mental protection aspect. The Court enunciated the principle
11 that every township has an obligation to provide least cost
12 housing for its fair share of the relevant housing market.
13 It also enunciates the principle that it should be done with
14 the least environmental cost.

15 The Courts recognized that environmental considerations
16 were just as important as housing considerations and as a
17 result of that statement and, also, as a result of the
18 Municipal Land Use Act in New Jersey, which became effective
19 in 1976, there is a procedure which townships should go
20 through in developing, first of all, its comprehensive plan
21 and second, its zoning ordinance. I would like to just go
22 through those steps.

23 Q Is this a procedure which you as a professor
24 of planning believe is appropriate in light of the obligations
25 under the Mount Laurel and Madison Township cases and the

1 land use law? A Yes.

2 Q Would you tell us what you think that
3 procedure ought to be?

4 A Let me say some words about the environmental cost.
5 When I am speaking of the least environmental cost, I am
6 talking about exactly the kinds of things referred to
7 earlier, minimizing runoff, minimizing sediment transport,
8 minimizing, generally, pollution by non-point source pollu-
9 tants with the resultant increased cost for treatment of
10 water down stream, bank erosion, destruction of life in
11 streams and the destruction of general amenities of stream
12 protection in open space, et cetera.

13 So drawing from the general planning principles
14 and, specifically, from the opinion in Oakwood-Madison,
15 there are several multi-step processes which I think planners
16 should go through in determining how to lay out the master
17 plan and how to design the zoning ordinance.

18 I would just like to go through these steps, if it is
19 appropriate now?

20 Q Would you, please?

21 A The first step would be to delineate the areas which
22 are already developed by major land use categories, residential,
23 commercial, industrial, public and recreational, and you have
24 most of those in Chester Township.

25 Open space: This serves to describe the existing

1 development and, also , to delineate which is left, the
2 developable lands, which was mentioned Oakwood-Madison.

3 In the course of doing this, I think it would be appropriate
4 for the township planners to analyze the housing stock by
5 housing type--cost, size, condition, et cetera--because
6 certainly in reviewing whether or not a township has met the
7 mandate of Mount Laurel and Oakwood-Madison, if it already
8 has a very large percentage of high density multiple family
9 housing units, or older housing which costs less, there is
10 probably more occasion for low and moderate income families
11 to be able to get housing within its borders than some other
12 township which has fewer of these type of facilities.

13 The second step would be to look at this developable,
14 or vacant lands, and to delineate those areas which should
15 not be developed at all because of ecological considerations.

16 Q Would you tell us what you mean by the word,
17 ecological?

18 A Yes. It has a slightly different meaning from
19 environmental in my mind. By ecological considerations I am
20 thinking about those parts of the countryside which are
21 particularly relevant to the whole, natural biota, whether it
22 is in the stream or on land, or in the area. The most
23 critical areas are the flood plains and I think it is useful
24 to think for these purposes in terms of one hundred year
25 floods--

1 THE COURT: When you say that you mean storms
2 would come every one hundred years and flood the
3 area?

4 A I mean that area of land which would be flooded by a
5 storm, which has the probability of coming every 100 years.
6 You may get two in one year, but it means that serious a
7 storm with that much rain only comes on an average over a
8 period of time once every 100 years, sometimes slopes, which
9 would be areas of more than 15 per cent gradients, aquifer and
10 recharge areas which would be places where rock deposits cut
11 the surface of the earth, porous rock deposits which are
12 water carrying. These layers of rock serve as important water
13 supply sources in many parts of the state and they may be
14 covered by an impermeable layer of rock so no water can come
15 directly to them and only can come where they break out of
16 the earth where it intersects the surface.

17 If you built a parking lot or shopping center on top
18 of that and where the aquifer gets its water, you are going
19 to cut down and also pollute amounts of water that goes into
20 it. So, these aquifer recharge areas should be identified
21 if they exist and be protected against development.

22 Also, as a general principle of ecological considera-
23 tion, it is important to preserve forested areas, either by
24 planned unit development techniques, or low density develop-
25 ment.

Transmittal Form For Use By Reporters Filing Copies Of Transcripts
In The Appellate Division

TO: Clerk, Appellate Division
Superior Court of New Jersey
Room 316, State House Annex
Trenton, New Jersey 08625

FROM: Frank E. Nolan (Reporter's name)

RE: Joseph Caputo et als v. Township of Chester

Lower Court Docket No. (Ind./Acc./Compl. No.) L 42857- 74 P.W.

County and Court Morris, Superior

Appellate Docket No. A- 0813-78

Transcript request dated November 20, 1978

Received from Philip Lindeman, Esq. (Party requesting transcript)

Name of court reporting agency from which transcript ordered (if applicable)

Date(s) For Which Transcripts Requested	Number of Transcript Copies Filed Herewith	Reason Copy or Copies Not Filed (e.g., date was a court holiday) (if applicable)*
1. <u>January 25, 1978</u>	<u>1</u>	
2. _____	_____	_____
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JAN 9 1979

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Date: Jan. 5, 1979 Submitted by: Frank E. Nolan (Reporter's signature)

cc: Administrative Office of the Courts
Attn: Chief, Reporting Services

Earl Carlson (Reporter's supervisor)

Lindeman & Ferguson (Attorneys and pro se parties, if known)

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1 The forested areas allow lots more infiltration of
2 water into the ground water. They retard the overland flows
3 of rain water and, therefore, cut down erosion and, of course,
4 have I think significant aesthetic value, which can properly
5 be taken into account in laying out the zone in a township.

6 Also, there may be areas where soils are unsuitable
7 because they are insatiable and unsuitable for foundations
8 because they are not solid and houses built there would tend
9 to crack. These should be identified and essentially set
10 aside from development, either by the use of planned unit
11 development or some kind of transferrable development type
12 techniques.

13 Then, the third step would be to delineate those areas
14 which are not developable because of lack of public water
15 and sewage systems, areas which are not cited for on-site
16 disposal of sewage because of a high water table or poorly
17 drained soils. It is always possible, I suppose, where you
18 do not have a public water or sewer system nearby to use some
19 kind of on-site system, but if they are inappropriate to
20 that they should be identified.

21 Here in this particular step the whole federal water
22 Pollution Control Act planning process comes to bear because
23 it will identify those areas which currently have public
24 water and sewer treatment, will identify those areas where
25 new sewage facilities may be placed and it will identify

1 those streams which are appropriate for water supply and
2 will be especially examined when the Section 208 plan is
3 completed to give some guidance to local planners as to what
4 the state's intentions are in the future, so that if a partic-
5 ular region is designated for very low density and very little
6 water and sewer construction, it would be consistent with
7 that plan for the local development to reinforce itself by
8 having lower density development or, perhaps, having public
9 open space or, perhaps, by using a HUD approach to preserve
10 more of the open lands in that particular area in open use,
11 so that Federal, state and regional planning comes into
12 this in a very concrete way except that at the present time,
13 of course, these plans are not complete and, so, cannot
14 come in, but in six or eight months it should be in and
15 should be able to give the township planners a much better
16 idea as to what to expect and to plan for.

17 At this point it becomes appropriate for the township
18 planners to perform a housing analysis along the lines
19 called for by Oakwood-Madison and if they are applying for
20 funds under the community development block grant program
21 of the Housing Community Development Act of 1974 and to
22 meet the requirements of the housing assistance plan, which
23 basically says: Review your present situation and find out
24 how many low and moderate income people you have and estimate
25 how many are expected to reside there in the next few years

1 and, then, take steps to either rehabilitate housing or
2 get projections for sub-divided housing, which would be
3 within their reach.

4 In New Jersey, even if you do not apply for that
5 program, under the Oakwood-Madison case it is mandatory for
6 developing townships to engage in this kind of analysis.

7 Having done this and having determined what a bona
8 fide allocation of low and moderate income housing is for
9 that particular township, the township would then have to
10 designate those areas within its borders which would be most
11 suitable for medium density garden apartment housing, or low
12 housing, or housing on small lots, probably less than 7,000
13 square feet. Such housing would have to have access to some
14 kind of public water and public sewage treatment facilities.

15 So that the major criteria which the township would
16 use in selecting these sites to meet the Mount Laurel and
17 Madison mandates would be to pick those sites which would
18 have the least impact on the ecological system and on the
19 hydrological system and on ground water and on surface water
20 areas which were fairly well removed from water supply stream
21 areas, which were well drained, and areas which were accessible
22 to public water and sewers, or which could be supplied with
23 existing public water and sewers.

24 The next step, which is step 5, would be that at the
25 same time that these residential calculations are being made,

1 the township can legitimately start planning for industrial
2 and commercial development of these obviously very different
3 kinds of needs and they should be close to major transporta-
4 tion routes and they will have some kind of pollutant discharge
5 and they will probably need fairly flat lands and they have
6 a specific criteria which have to be met to make the site
7 attractive for industrial or large scale commercial activities.
8 Here again the Federal Water Pollution Control Act and the
9 Clean Air Act and, perhaps, the Resource Conservation Act,
10 if solid waste is involved with those industrial areas, would
11 have to be complied with and their principles have to be
12 incorporated in the planning of the local government.

13 Having done that and not having over-zoned for
14 industrial, as both Mount Laurel and Oakwood-Madison caution
15 against, the rest of the township and the rest of the area
16 could be zoned at relatively low density. I think footnote
17 9 in the Oakwood-Madison case points out, specifically, that
18 once the township meets its constitutional obligations that
19 under Oakwood-Madison it is perfectly permissible, subject
20 to any other constitutional limitations such as for the
21 township to zone at lower density numbers and much lower
22 density than the 7,000 square feet.

23 Then, finally, the 7th step would be to review the
24 overall set of land development regulations to remove undue
25 cost generating provisions, which would inhibit the township

1 from meeting least cost housing, and, also, least environmental
2 mental cost goals of the Oakwood-Madison case.

3 I tried to show how all these different principles
4 come to bear on what this township should do with this
5 particular site and all bear directly on non-structural
6 techniques and you are going to have to deal with this
7 particular stream and its water quality and to set some
8 standards and there are going to have to be other things
9 that have to be done besides making sure of what comes out
10 of the pipes to meet the standards of the Clean Water Act.

11 Q What is the unit of government that is respon-
12 sible for implementation of this non-structural approach to
13 land use planning and water quality protection in New Jersey?

14 A I think that the exact responsibility for the Section
15 208 management aspect has not been fully articulated because
16 the plan has not been completed. Both the state and the
17 local governments will have a responsibility in implementing
18 these plans, but the state will have to insure that the
19 requirement of the state laws have to do with the discharge
20 and that permits are met and water quality standards are met
21 with the construction of new facilities.

22 However, the local government has the primary respon-
23 sibility for land development regulations, so that in that
24 sense it will have a major role in it by determining through
25 the shape of its land development regulations and through its

1 sub-division regulations and HUD and so forth, what goes
2 where and, as I have tried to point out, location is a
3 tremendously important matter in trying to minimize the
4 impact of new developments on the hydrological system.

5 So, my prediction at this point would be that it
6 would be a shared responsibility between the state department
7 of environmental protection and local governments with
8 perhaps, input from the county with the major responsibility
9 for land use control being at local government level.

10 Q Is it appropriate and legitimate for a muni-
11 cipality to concern itself with the concerns you articulated
12 about protection of water quality in its land use controls?

13 A I do have an opinion, yes.

14 Q What is that?

15 A Well, as the Courts in Oakwood and Madison emphasized,
16 the picture of urban development involves lots of different
17 considerations. The local township is responsible, primarily,
18 for management of local land development, so that is can
19 legitimately take into account both under Oakwood-Madison
20 and the municipal land use acts, a whole series of different
21 considerations. I think there are really four major tests.
22 The first is the general articulation of policies for the
23 development of lands for industrial, commercial and residential
24 open space uses and, in short, the capacity to manage what
25 happens, so that the township is not the prey to economic

1 forces.

2 There is a strong impetus in the planning laws in
3 New Jersey and under all these various acts for government to
4 get on top of the development processes so that the first
5 main objective is to control, taking a lot of different
6 policies into account, what happens.

7 The second is the very strong emphasis on protecting
8 the environment against undue impacts. Obviously, any con-
9 struction is going to have some impact on the environment.
10 The best we can do is to try to minimize that by proper
11 location and proper design and proper treatment of the by-
12 products of the developments.

13 The third is very importantly emphasized in Oakwood-
14 Madison, the provision for adequate housing. Now, there have
15 been some very interesting developments in New Jersey recently.
16 The governor's commission to assess facility needs has empha-
17 sized that the state policy should be to encourage some of
18 the developments in some of the older cities, which are having
19 economic problems and which have suffered from declining
20 population, if you assume that there is a fairly stable
21 level of demand for new housing and new industrial facilities
22 and new commercial facilities in various metropolitan areas
23 around the state, this means that more of that demand should
24 be satisfied in the older urban areas such as Camden and
25 Newark and Elizabeth and so forth, and that means that less

1 would be satisfied in the fringe areas. If this state
2 policy were implemented it would logically mean that not
3 all townships would have the same obligations to accept new
4 developments. There would still be some obligations to
5 provide housing, but it would be ameliorated or lessened
6 by the fact that more of this housing would be provided nearer
7 the older cities.

8 Finally, you have the constitutional interest of
9 private property owners not to have their properties over-
10 regulated or owner-restricted so that there is a taking.

11 The local government has all of these kinds of
12 policies to take into account and can legitimately take them
13 all into account under Oakwood-Madison decision, so that in
14 trying to meet that mandate with good faith the local govern-
15 ments and local planners can take all of the kinds of things
16 which I tried to spell out in this seven step process into
17 account and try to minimize the impact of the environment on
18 the water system and air and so forth while at the same time
19 meeting other objectives.

20 Q Professor Keene, you mentioned earlier environ-
21 mental costs as a result of poor planning.

22 Can you explain what you really mean by that
23 any more than you did before, or is my question inappropriate?

24 A I can summarize. I have tried to spell out to some
25 extent what I meant by that. I mean by an environmental cost

1 these impacts on the environment which are a detriment.
2 Now, they can be esthetic detriments. I think we may be
3 less concerned with that, though that is a perfectly legiti-
4 mate objective to preserve the open space and to preserve
5 the beauty and rural character, but more important I think
6 are the kinds of air, water and ground pollutions which the
7 three major federal acts and corresponding state acts are
8 directed to.

9 Q As to water pollution, what further costs can
10 you give us examples of that might be incurred by poor environ-
11 mental planning with respect to the siting of houses and
12 in the zoning frame of reference that we are talking about?

13 A If a major new development is located and designed so
14 that there is more runoff directly to the stream and not into
15 the ground water than would occur if located differently and
16 designed differently, that will increase the flood peaks
17 and accelerate the flood peaks because the water will get
18 there more quickly and more of it will get there. This will
19 mean into the downstreams.

20 Q Could you include in that definition the cost
21 damage which a flood would do, or the cost of measures to
22 prevent that damage from occurring?

23 A Well, levees or structural expenses to take care of
24 the increased flow which occurs as a result of the greater
25 development of upstreams. By the same token, we mentioned

1 the low flow problem. The less water that goes into the
2 ground water, the less water there is for water supply.
3 Therefore, it would be more polluted.

4 Q Does low flow affect adversely the assimilated
5 capacity?

6 A There are two major consequences. First of all,
7 everything else being equal, a shallow stream will in the
8 summertime have a higher temperature than a deep stream,
9 so that the bio-chemical oxygen demand is increased. The
10 bacteriological processes take place at a greater level and
11 the oxygen in the stream is reduced. Therefore, the water
12 is more polluted. If there were not a low flow problem,
13 it would be undiluted by one cubic foot per second. If there
14 is a low flow problem, it will rise as polluted and the water
15 may have the same or assimilated capacity and it will not be
16 able to do as good a job.

17 Q Is there a relationship in your mind as a
18 planner between the amount of pollution going in upstream
19 and the cost to treat the water to make it potable downstream?

20 A Well, yes. I think there is a direct relationship
21 between the degree of pollution of intake water and the
22 expense of the treatment to it to make it potable to meet
23 the safe drinking ^{ACT} requirements, so that by improper loca-
24 tion and by improper design of the development, not only
25 will there be more pollutants but they will get into the

1 water supply stream either through the runoff or through
2 pipes.

3 Q Do you have an opinion other than what you
4 you just told us as to how Chester Township must go about its
5 planning and zoning processes in order to be in compliance
6 with the scheme as set forth by the federal and state statutes
7 and the policies about which you testified?

8 A Well, one thing which I have not emphasized is the
9 problem of a particular nature which the local government
10 in Chester Township has and the planners have and the problem
11 which they face right now, and that is that the state and
12 federal planning activities are in process. There are some
13 general directions indicated in the 303 E plan and I think
14 even less in the draft work program, Section 208 plan, so
15 that it is quite difficult for the local townships, Chester
16 Township and elsewhere, to estimate or to anticipate with
17 precision just what kinds of management regulations and
18 district discharge regulations and so forth will be in effect
19 for the particular streams which run through their jurisdic-
20 tions.

21 Now, this should clarify in a few months. As Mr. Ike
22 said, the 208 plan is supposed to be out by the first, but
23 deadlines have been missed before and I am not sure they are
24 going to have a very concrete plan at that point. So, there
25 they have to go ahead and make decisions if they can and at

1
2 the same time wisdom suggests that they should wait to get
3 a clear idea of what the outlines of the local areawide
4 treatment planning guidelines are going to be.

5 Q Just one more question, Professor:

6 Is there a relationship between the cost of
7 housing and the location of that housing in terms of being
8 good environmental planning or bad environmental planning?
9 In other words, does the housing which is located poorly
10 from an environmental point of view tend to cost more in
11 dollars to build?

12 A Well, to the extent that it is necessary to build
13 protection against flooding, for instance, it would be more
14 expensive. The environmental cost of poorly located and
15 poorly designed housing may not be suffered by the developer
16 or the buyer of the housing, but they would be experienced
17 by people downstream from that project, either by the individuals or municipalities.

18 MR. FERGUSON: That is all the questions I have.

19 CROSS-EXAMINATION BY MR. LINDEMAN:

20 Q Professor, in the five criteria that a planner
21 should go through to properly plan and advise the municipality
22 for which he works, with that area of medium density and
23 presumably multi-family dwellings, one must have a public
24 water system and a public transportation system available?

25 A No. I didn't say public transportation. I said public

1 water and public sewer facilities and a sewage system.

2 Q I am sorry.

3 A In that density it just is not feasible to use
4 septic tanks at that density.

5 Q When you say at that density, what did you
6 have in mind?

7 A I am speaking of 7,000 feet per dwelling unit at the
8 minimum density; in other words, anything which is more
9 dense than that in order to protect.

10 Q You are saying 7,000 square feet?

11 A 7,000 square feet.

12 THE COURT: In a building lot?

13 A Per lot, yes.

14 That would be roughly six or a little bit more than
15 six units per acre.

16 BY MR. LINDEMAN:

17 Q And if there were more than six units?

18 A At that density in most cases you would need some
19 kind of public water and public sewer facilities.

20 Q And a public water supply as well?

21 A In most cases, yes.

22 Q Just what do you mean by a public water supply?
23 Do you mean one where water is actually piped in from a
24 commercial source?

25 A I mean not wells and not just somebody digging a well

1 in the back of their 7,000 foot lot, but some kind of a
2 system. It doesn't have to be a large public system, but
3 there has to be a water system supplying an area of this
4 density. It may come from a well. It may come from a stream,
5 but there are pipes from the filtration plant and from the
6 water supply plant that go to each house.

7 Q Would you say, then, that if on a tract of
8 let us say 150 to 160 acres that 150 units are authorized to
9 be built under the zoning ordinance, which is the case in
10 Chester Township, that if there is not a public water supply
11 system, nor a public sewage system, that Chester will have
12 improperly planned in accordance with your criteria?

13 A Do I understand you to say 150 houses an acre?

14 Q 150 units. I guess I cannot say houses neces-
15 sarily. I think that the ordinance is drafted in terms of
16 units, but a maximum of 150 units are permitted in three of
17 the RM zones and you cannot have more than 300 overall, but
18 any one tract cannot have more than 150 units.

19 A I believe they have to be concentrated in ten per cent
20 of the area, is that correct?

21 Q I do not think there is any concentration of
22 that kind in that requirement. Do you have the ordinance?

23 A Yes.

24 I think in Table 4 it refers to the maximum percentage
25 of lot coverage as ten per cent per RM, which would mean those

1 150 units, if that is the example you want to pick, would
2 be located on 15 acres.

3 Q Now, if that were the case then?

4 A I would say in that case it would need some kind of
5 a public water supply system and a public sewage system.

6 Q And if there were no such system available,
7 then, at least as you view it, the planning would be faulty
8 in that respect, is that correct?

9 A No, because in many cases it is anticipatable that
10 public water and sewers can be made available to such sites.

11 Q We are speaking of assumptions and imponderables?

12 A Yes, we are, and it is quite difficult to respond to it.

13 Q But if one makes the assumption that it is not
14 available and it is not likely to be available for at least
15 a few years after the construction is completed, is it then
16 faulty?

17 A Are you referring to the RM zone specifically in this
18 map?

19 Q Yes. I am.

20 A I do not think I can either agree or disagree with the
21 assumption, which of course is the key element of the question,
22 because I don't know whether the existing sewage treatment plant
23 can be expanded or whether some trunk line can be extended to
24 the east through Burnett's Creek for water supply, or whether
25 there may be a major trunk line built to the west of 206,

1 because I think it appears in the Morris County plan. So,
2 I would not want to respond to the assumption without having
3 some idea of the factual basis of it.

4 Q It is correct to say, is it not, Professor,
5 that unless there is something about the environment which
6 actually cries out for absence of construction, total absence
7 of construction, such as the flood plains and the condition
8 of the streams or slopes, or the character of the soil being
9 not suitable to ~~be~~ construction, that the question then
10 exists as to the number and character of the housing but not
11 that it should not be constructed; is that a fair statement?

12 A Well, I would like to reword it, if I may.

13 As I say, these environmental or ecological constraints
14 exist. The areas which I mentioned and which you just men-
15 tioned are those for which the argument is strongest that
16 they should not be developed.

17 As you move away from the stream, let us say from
18 Peapack, there is less and less ecological justification for
19 limiting developments to the point where if you go up the
20 valley, you go up the slopes of the valley at the point that
21 you get to the ridge between that stream and the next stream,
22 the ecological impact on the hydrological system will be the
23 least. So, in deciding where on the plan the high density
24 developments are, the more you move it away from the water
25 supply streams and areas of some natural significance, the

1 less the probabilities are that you will do ecological
2 damage.

3 I cannot say that if you build a house 500 feet from
4 the stream that that is going to be a disaster, ecologically
5 speaking, but I can say that everything else being equal that
6 it is better to put them 500 feet away than it is to put them
7 200 feet away and, depending upon the circumstances, 1,000
8 feet away, but in most cases it would be better to put them
9 1,000 feet away because the impact would be more attenuated
10 on flowing water. So, it is a matter of degree.

11 Q Would you say that the zoning of two acres per
12 unit right on Burnett's Brook would be good or bad planning?

13 A Which brook?

14 Q Burnett's Brook. Burnett's Brook runs to the
15 east from the Borough in case you don't know?

16 A Again, I don't know. I have not been to Burnett's
17 Brook. I think there are better ways of controlling develop-
18 ments in areas of significant ecological importance than two
19 acre zoning and five acre zoning. These better ways are
20 rather difficult to implement and most townships around the
21 Country have not really moved to the point where they are
22 able to use those better ways. I am thinking about transfer-
23 able development. There are several experiments in New Jersey
24 growing out of Rutgers University where they are trying to
25 impose rather severe limitations on areas of ecological

1 importance. One hundred feet on the other side of Burnett's
2 Brook there would be no development, but people who own
3 property that goes across that line, some of it being within
4 the one hundred foot area and some of it being outside, can
5 concentrate their developments on the part outside, or if
6 somebody has property completely within one hundred feet or
7 two hundred feet of the Brook, they may be authorized to sell
8 their development rights to somebody who owns land up on the
9 ridge and they would then have to keep their lands in its
10 open state to achieve the ecological objectives, but they
11 would be compensated as to the decline of the market value,
12 which would be occasioned by these vary harsh restrictions.

13 I think, frankly, that the thrust of your question
14 is that there are better ways of doing that. Whether or not
15 this particular township is in a position yet to do that is
16 another question.

17 Q The results of this after the development rises
18 would be something akin to clustering and planned unit develop-
19 ment, wouldn't it, because there would be large spaces of land
20 unused and the concentration of living and use of the land
21 would be centered in a smaller area, isn't that so?

22 A There would be a development district in which the
23 owners would be able to build at higher densities than the
24 zoning ordinance allowed them initially, if they possessed
25 development rights which they bought from people. It is an

1 expansion, really, of the planned unit development concept
2 because it is not related just to one tract. As you know,
3 in planning developments, you are allowed to shift the
4 developments around within the tract.

5 Q Here the development is shifted around between
6 tracts consensually and a property such as the Caputo tract
7 which is both immediately surrounding and some distance from
8 the Peapack Brook, could be a property on which multi-units
9 for dwellings could be constructed and utilized, assuming
10 that all of the other environmental protection considerations
11 were satisfied. Is that not so?

12 A That is really a statement of fact and I don't think
13 I am in a position to answer. I am not in a position to say
14 there is no room on the Caputo tract for apartments because
15 I simply have not studied the tract in detail as far as the
16 topography and soil location of different types of soil and
17 ground water and depth to ground water and surface streams
18 and so forth. That has not been part of my charge.

19 Q I know that and you stated that in your direct
20 examination and I cannot, of course, bring you down to that,
21 but I am just trying to find out then if, conceptually, if
22 properties, such as the Caputo tracts cannot accommodate
23 itself to multi-family dwellings and provided that these other
24 limitations and restrictions and criteria that we are all
25 concerned about are met, it is still conceptually possible,

1 isn't it?

2 A Well, again, I find that question hard to answer
3 because you say a property like the Caputo tract. Like it
4 in what respect? You are talking about how large a property?
5 Two hundred-fifty acres?

6 Q Yes. Two hundred fifty to two hundred seventy-
7 five acres through which water quality stream runs?

8 A Yes. That has some flat areas and some good soil and
9 some steep slopes. Two hundred seventy acres is a little
10 bit less than a half or a quarter of a mile. That would mean
11 that it would be a little bit less than a quarter of a mile
12 on the side, if you thought of it as being a square.

13 Now, if you were to imagine that the stream ran down
14 the eastern part of that quarter mile square and if you were
15 to ask me: Let us assume that it is a small stream and
16 comes up to a ridge roughly 1300 feet to the west, which is
17 possible as it is a quarter of a mile and it is 1300 feet,
18 and if we were to assume all the steep slope considera-
19 tions and the ground water considerations and the stability
20 of the soil for housing and forest cover accessibility to
21 public water and sewer and to reasonably good transportation
22 facilities, probably in terms of high density development
23 you would not want it to go in a back road somewhere.

24 If you were to assume all those kinds of things, in
25 other words, if you assume in fact there were no negative

1 ecological effects from locations of this particular garden
2 apartment a quarter of a mile from the stream, then I would
3 say, yes, conceptually it would be possible; but the answer
4 has to assume that for the question because it is impacts
5 that we are talking about. If the impacts would be there,
6 then it would not be good. If the impacts were not there,
7 then, there is no problem.

8 MR. LINDEMAN: I have no further questions.

9 REDIRECT EXAMINATION BY MR. FERGUSON:

10 Q Even if that were true with respect to any
11 particular parcel of land, would it be appropriate for a
12 municipality to zone to allow it?

13 A Even if what were true?

14 Q Even if Mr. Lindeman's proposition were true
15 that on any given parcel everything worked out so there were
16 no environmental impact, would it be appropriate to create
17 a new zoning ordinance to allow for development of that unit
18 as a higher density and not allow for the development of the
19 surrounding area? How legitimate would it be to provide for
20 this development and this one tract as opposed to a larger
21 area around that tract?

22 A Well, I think that, obviously, under Oakwood-Madison
23 the Township does not have to zone every site which might be
24 environmentally appropriate for high density as high density.
25 The town, therefore, would not have to do that. The township

1 might decide that appropriate medium and high density areas
2 would be concentrated in a particular part of the township
3 and it might be closer to commercial establishments and it
4 might be closer to jobs and it might be close to good highways
5 or transportation facilities. The fact that in principle
6 or conceptually there were several spots throughout the
7 township which might be appropriate for higher density zoning,
8 from an environmental point of view, that would not mean that
9 all of them would have to be zoned higher density at the
10 first crack.

11 I am not sure if that is what you are asking?

12 MR. FERGUSON: That answers my question. That
13 is all I have.

14 MR. LINDEMAN: That is all.

15 THE COURT: Step down. Thank you.

16 (Whereupon the case was adjourned.)
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20

21 I, Frank E. Nolan, certify the foregoing.

22 

23 Official Court Reporter.
24
25